

**CALIFORNIA MARINE LIFE PROTECTION ACT INITIATIVE
MASTER PLAN SCIENCE ADVISORY TEAM**

Meeting Summary

February 11, 2005

Elihu Harris State Building

1515 Clay Street, Room 2

Oakland, California

Science Team members present: Mark Carr, Steve Gaines, Doyle Hanan, Rikk Kvitek, Steven Murray, Mark Ohman, Jeff Paduan, Steven Palumbi, Linwood Pendleton, Laura Rogers-Bennett, Kenneth Schiff, Astrid Scholz, Rick Starr, William Sydeman, Dean Wendt, Mary Yoklavich

Not present: Loo Botsford

Others present: Science Team Chair Stephen Barrager, notetaker Carrie Kappel, and approximately 15 members of the public

DFG staff: John Ugoretz

MLPA Initiative Staff: John Kirlin, Mike Weber

Introduction

Science Team Chair Steve Barrager welcomed the group and set the stage for the day's discussions with some comments on decision-making based on decision theory and his experience. Steve emphasized that judging the merit of any decision is difficult, but that decision quality has six elements:

1. The appropriateness of the framing of the situation.
2. The creativity and do-ability of proposed alternatives.
3. The meaningfulness and reliability of information used.
4. The clarity of values and trade-offs.
5. The logical correctness of the reasoning used.
6. The commitment to action.

Steve suggested that the science team give some thought to the reasons why preceding efforts may have been less successful and how these relate to the six elements. Since we are in the early stages of decision-making, Steve put special emphasis on the importance of appropriate framing.

Steve went on to talk about the difficulties of confronting decisions that have both high analytical and high organizational complexity. The design of marine protected area networks is definitely in this category. He suggested that three norms are important when working in this realm:

1. Use a good, straightforward decision process.
2. Involve the right people in a decision dialogue.

3. Use appropriate tools to improve communication, creativity, and analysis.

Steve went on to explain what such a decision process might entail and some of the tools that might be applied.

Goals and Objectives of the MLPA Initiative

John Ugoretz, DFG's MLPA and nearshore ecosystem coordinator, reviewed the goals and objectives of the MLPA from the language of the act and addressed the role of the science team. John stated that MLPA requires that a master plan team be convened to advise and assist the department in preparing the master plan. The current Master Plan Science Advisory Team is an expansion of the team required in the act. For example, more economists and sociologists have been added; social scientists were not required specifically under MLPA. John explained that the act requires that decisions be based on "sound scientific guidelines" and the "best readily available" and "up to date" science. Specific roles for the science team that John outlined include:

- Providing input, editorial comments, and advice on draft documents.
- Recommending additional information needed to make sound decisions.
- Working as sub-teams to synthesize available science into user-friendly formats to help DFG put this information into documents.
- Helping to draft portions of the master plan framework and/or central coast proposal of MPA alternatives for a network component.
- Responding to scientific issues raised by the task force and central coast stakeholder group.

Team members asked and discussed how they can provide input into the creation of scientific criteria for decision-making and the generation of alternatives, and then later in the process, turn around and objectively evaluate the alternatives.

John noted that names of volunteers for the Central Coast Science Sub-Team would be taken during this meeting.

In response to questions from the team, John explained that a draft review of existing MPAs in California waters and research done on or in those MPAs has been undertaken and is available on the MLPA Initiative website.

Team members also inquired about language in Goal 6 of MLPA, which requires that MPAs be designed and managed *to the extent possible* as a network. John stated that this language did suggest that there must be a statewide network, but that this did not necessarily mean that there must be new MPAs in all regions. He also offered to ask DFG staff for further clarification on what is meant by "to the extent possible" within a policy context.

Team members and John discussed the intersection between the goals and objectives of MLPA and of fisheries management in general, and the need for a cost-benefit analysis of the

various management alternatives for meeting goals of the act. John made it clear that the MLPA master plan and Marine Life Protection Program would not result in changes in fisheries management beyond MPAs, but that the team could make recommendations about such if they felt them to be important. Mary Yoklavich and Loo Botsford were identified as potential links to a parallel federal planning process for reserve design on the West Coast under the Pacific Fishery Management Council. John also urged team members to help the public understand the differences between and among MPA and fisheries management measures.

John Kirlin encouraged the team to frame the issues around the tools available to them via the act, namely spatial management via MPAs.

The team discussed roles of MPAs, emphasizing that contributing to overall network function could be the role of an individual MPA.

In response to questions, John Ugoretz outlined the process by which the team will communicate with and advise the Blue Ribbon Task Force. The team will review and comment on prepared documents, which will then be revised by DFG and MLPA Initiative staff based on the team's comments and those of the public. The documents, once finalized by the task force, will go to DFG for its review and potential revision and then, from there, to the Fish and Game Commission for action. There may also be opportunities for direct input to the task force or input via Steve Barrager to the task force, and opportunities for input into the Fish and Game Commission process. The commission may seek the advice of the team in evaluating options.

The team discussed the need for socioeconomic and/or cultural objectives in the guidelines for MPA design. Team members also discussed whether new data would be collected to fill gaps identified during the review of existing MPAs and existing data. John stated that MLPA does not require collection of new data, but to the extent possible, important new data and existing data will be collected and compiled.

Draft Master Plan Framework: Design and Evaluation of MPA Networks

Mike Weber led a discussion of the draft guidelines for design and evaluation of MPA networks given in the Preliminary Draft Master Plan Framework (available on the MLPA website). This framework is intended to facilitate logical step-by-step implementation of the MLPA by providing guidelines for decision-making. He reported that the entire draft will be available shortly and open for comment until March 1. The revised document will be returned to the team on March 14th or 15th and discussion will continue at the March 23rd meeting. The document will then be revised again into the final draft, which will be presented to the task force at the April 11-12 meeting, after which it goes on to DFG and the commission.

The group discussed the focus of the framework document. Mike emphasized that it is to be general and process-oriented. More specific guidelines for interpretation and application of the MLPA's goals and objectives will be undertaken by the central coast sub-team. Their guidance will then be attached to the framework as an appendix and will be used to revise later versions of the framework and other regional plans.

Team members asked about the timeline for planning and implementation and the scope of the framework. Mike responded that the framework will apply to the whole state, with implementation proceeding regionally, starting with an area along the central coast and resulting in a statewide network by 2011. This will allow other regions to learn from the central coast process.

The team discussed the definition of habitats used in the framework. The importance of ocean climates, (the water column component of habitat), freshwater input, spatial scales of heterogeneity, and habitat quality was discussed. The need to define both unique and representative habitat types was brought up. A sub-team composed of Mark Ohman, Jeff Paduan, and William Sydeman, with Steve Gaines as chair, was designated to tackle the question of how to define habitats.

The team discussed the need for reference sites – sites open to fishing which serve as controls for comparison and evaluation of the effectiveness of MPAs – which should be picked just as carefully as the MPA sites, matching scales of spatial heterogeneity, for example.

The team brought up the need for a common geographic information system (GIS) framework for collecting, analyzing and presenting all the biophysical and socioeconomic data the team and task force will use. John Ugoretz described the DFG resources available for this, including staff time through the University of California, Santa Barbara, an ARCIMS server that could host the data and make it publicly available, and a GIS technician to be associated with the MLPA Initiative. Rikk Kvitek was nominated to be the team's liaison to DFG GIS staff and resources. The team also discussed how these efforts will coordinate with other spatial data collection efforts such as Environmental Defense's OceanMap. John and Rikk will report back at the next meeting regarding plans for GIS support and data coordination, storage and access. Astrid Scholz offered support from Ecotrust as well for these efforts.

The team talked about other data sources that should be incorporated, including socioeconomic data and data on unique or critical habitats. The importance of reviewing and controlling the quality of input data and prioritizing among available datasets was also discussed.

Another sub-team was created to work on data issues, e.g. what data are needed, which are available, how can data quality be evaluated and data acquisition prioritized, and how may those data be applied? Rikk Kvitek as chair, with Laura Rogers-Bennett, Astrid Scholz, and Steve Gaines will make up this sub-team. The team plans to review the final list of data layers to add caveats about data quality and how layers might be applied.

The team considered a number of more specific issues related to network design, including:

- issues of MPA size and spacing;
- focal species approaches versus other approaches;
- approaches to designing MPAs other than "no-take" reserves;

- definitions of terms used to describe habitats, e.g. extent, quality, etc.; and
- the need for common terms that can be applied to both biophysical and socioeconomic data.

Steve Palumbi as chair, with Astrid Scholz, Mark Carr, Steve Gaines, and Rick Starr formed a design criteria for MPA networks sub-team and offered to draft a set of scientific design criteria for MPA networks based on the best available biophysical and socioeconomic science. They will address issues such as how spatial scales of individual movements of focal species and of larval dispersal should guide decisions about MPA size and spacing.

The team discussed the need for objectivity in their later role in advising the task force in the evaluation of alternatives. Members emphasized the importance of providing clear criteria and guidelines early in the process so that goals for design are well-framed, regional groups can be more effective, and the science team can retain objectivity in the final evaluation.

Timeline for the MLPA Initiative

John Kirlin, MLPA Initiative executive director, distributed a milestones timeline for the MLPA Initiative. The following is a summary of important milestones in the process:

- February 22, 2005 (Note, this decision has been deferred to the April 11 task force meeting) – Selection of central coast study region; public comments in Bodega, Santa Cruz and Morro Bay, February 15, 16, 17.
- Late February or early March 2005 (This process will now begin after April 11) – Start of central coast regional planning process.
- April 2005 – master plan framework (MPF) approval by task force, submission to DFG
- August 2005 – Commission's first opportunity to act on MPF, following public comment; science team may be asked to provide comment.
- December 2005 – Development of long-term strategies for financing, management and enforcement.
- March 2006 – Central coast network component submission to Fish and Game Commission.
- June or July 2006 – Following public comment, commission may act on central coast network component.
- November 2006 – Development of recommendations for coordination with federal government.
- December 2006 – Agreement among state agencies to complete MLPA implementation by 2011.
- 2007 through 2011 – Implementation of other regional network components in a phased approach.

In response to questions from team members, John clarified that central coast study region planning will begin immediately following selection of the study region and will not have to wait for commission approval of the MPF, though any changes made to the MPF will have to be incorporated into the regional planning process.

Recommendations for the Central Coast Study Region

John Ugoretz presented the criteria for selection of the central coast study region, which the task force revised based on comments of the science team, the public, and previous MLPA working groups, and information about DFG nearshore fishery management areas. The draft document is available on the MLPA website. The criteria are listed below:

- Biophysical boundaries
- Area big enough for replicates?
- Relative amount of habitat mapped
- Human activity boundaries
- Progress of past MLPA and other public discussion groups
- Scientific knowledge of, and research being conducted in, the region
- Availability of firsthand knowledge of the area
- Number of existing MPAs
- Availability of scientific data about existing MPAs and how they meet or do not meet both resource protection needs and the requirements of the MLPA
- Existing fishery regulations in the region and how they meet or do not meet both resource protection needs and the requirements of the MLPA
- Number of complete DFG fishing districts and management areas (related to existing fishery regulations)
- Range or area over which resources are utilized by user groups
- Range or area over which a resource user may be expected to have a working knowledge of the resources
- Distance members of a regional stakeholder group would need to travel in order to participate in group meetings.
- Availability of DFG personnel

John also presented the 10 alternative study regions currently proposed under the criteria:

1. Pt. Arena to Pt. Año Nuevo
2. Bodega Head to Cambria
3. Pt. Reyes to Pt. Sur
4. Golden Gate to Pt. Lobos
5. Golden Gate to Pt. Sur
6. Pigeon Pt. to Lopez Pt.
7. Pt. Año Nuevo to Pt. Sur
8. Pt. Año Nuevo to Pt. Conception
9. Pt. Sur to Pt. Conception
10. Lopez Pt. to Pt. Conception

The team first discussed whether amount of habitat mapped was a valid criterion, given that there might be resources available to get areas mapped quickly. Rikk Kvitek presented a map of high resolution multi-beam sidescan sonar habitat mapping that has already been done for

some areas of the central coast. Though there are resources for further mapping, in reality, products of such mapping would not be processed and available for a year or so. Other sources of lower resolution habitat mapping data were discussed as well.

The team discussed the criteria related to stakeholder input such as distance they would need to travel and area over which they could have a working knowledge of the area. There was some concern that (1) these are not scientific criteria, and (2) no single individual should be expected to have a working knowledge of the entire study region, but decisions should be made based on collective knowledge of multiple individuals.

There was concern from the team that this list of criteria appears to have been approved by the team, yet they did not approve it in its entirety and in fact asked that at least one of the criteria be removed. John emphasized that their role is to provide input, not approval, and that their additions and comments from last meeting had been incorporated. John asked team members to rank the criteria according to their importance.

Some members of the team were concerned that they had not been given the opportunity in the past to articulate a consensus view.

Using their own implicit and explicit criteria, (outlined below), the team generated a list of four potential alternatives:

1. Pt. Año Nuevo to Pt. Conception
2. Pt. Año Nuevo to Cambria
3. Bodega to Cambria
4. Pt. Año Nuevo to Pt. Arena

A “straw poll” was taken to rank the relative level of acceptance of the above alternatives. It was understood that the purpose of this “straw vote” was to give the Blue Ribbon Task Force some sense of the strength of the SAT preferences. Mark Ohman abstained from the voting because he felt the team hadn’t taken enough time to discuss the scientific merits of each choice. He also mentioned other criteria – important unique habitat, centers of endemism and species of importance.

Scientific criteria the group discussed included:

- Upwelling cells: The consensus was that areas of relatively coherent oceanographic conditions, represented by the five main upwelling cells along the central coast, (centered off Pt. Arena, Pt. Reyes, Davenport, Pt. Sur, and Pt. Conception respectively), might be good proxies for biological and physical conditions. In particular, the team felt that dividing up upwelling cells should be avoided when placing boundaries of the study region.
- Size: The team felt it was important that the study region be large enough to encompass a self-sustaining network of reserves.

- Biogeographic boundaries: Major biogeographic zones were also considered by the group. There was agreement that Pt. Conception is a major break. Other breaks in the northern part of the central coast are more subtle.
- Species ranges: Ranges of particular species of interest, including endangered or threatened and keystone species were considered. Southern sea otter was one of the only such species with a major break in range in this area; it is found south of Año Nuevo but not north. Other marine mammals, marbled murrelets and black abalone were also mentioned, though these species do not have significant population breaks within this area, but may show genetic differentiation, differential survival or reproductive success, breeding activity, etc.
- Critical or unique habitat.
- Centers of endemism: A center of endemism has been noted for seaweeds in Monterey Bay, but this is likely to be a collector effect. Satellite populations of some southern species are also known from Monterey Bay.
- Replication of fishing fleets or gear types: There was discussion about the importance of picking an area that encompasses several different fishing fleets and/or different gear types within the same fishery so that the differential impacts on different uses can be studied. Some felt it important not to split a fishing fleet; i.e. entire fleets should be encompassed within the study region. Capturing an area with significant economic weight and relatively homogenous fishing activity and intensity was also discussed. Because of the variation in spatial scale and patterns of use among the various fisheries, achieving such homogeneity may be challenging.
- Potential to link up existing MPAs: A region stretching to Pt. Conception has the advantage of being close enough to potentially link up with the Channel Islands Marine Reserve network.
- Homogeneity of region and ease of management.

Some concern was expressed among team members about the process used to generate and vote among alternatives. Some felt there had not been sufficient time to fully elaborate the scientific criteria used to rank among options. Staff encouraged team members to provide detailed written comments about criteria and rankings to John Kirlin, John Ugoretz or Mike Weber.

Steve Barrager suggested the possibility of team members providing direct feedback to task force members at a future meeting (April 11-12). John Kirlin will talk with the task force chair about this possibility.

Staff discussed ways for team members to participate in other parts of the MLPA Initiative process during public meetings and as experts on a panel at next task force meeting (February 22). Interested volunteers should contact Initiative staff.

Team Challenges

Steve Barrager led a discussion of the challenges to this team moving forward. The challenges were based on Steve's reformulation of the team's response to the "How could we fail?" question posed at the January meeting. The challenges proposed were the following:

- Get the appropriate frame.
- Keep the frame broad so we cover all the significant issues and consider a full range of MPA strategies.
- Avoid advocacy (leave the policy judgments to the task force).
- Provide a comprehensive, quantitative evaluation of strategies.
- Speak to the task force with a clear voice.
- Incorporate the "lessons of the past."
- Utilize all available expertise.
- Balance time, money and quality.

Comments from the Public

There were comments from several members of the public. Issues they raised included:

- the need for considering recreational objectives of MPAs in decision-making and network design;
- the need for rules with clear, easily evaluated justifications;
- the importance of biological criteria in designating the central coast study region
- a caution against putting too much focus on fisheries enhancement relative to other goals of MPAs;
- the need to think ahead, beyond this process-oriented stage, toward implementation of a scientifically based reserve network; and
- concerns about the team's decision-making process around study region rankings.

The next Science Advisory Team meeting will be in Oakland at the Elihu Harris State Building, 10:00 a.m. to 4:00 p.m. on Wednesday March 23, 2005. A tentative April meeting was set for the same place and time on Thursday April 21, 2005. This meeting will only occur if needed.